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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,698	08/29/2003	David S. Goldberg	LEDGE-002	9205
34111	7590	09/08/2005	EXAMINER	
STEPHEN J. LEWELLYN 933 OLEANDER WAY SOUTH SUITE 3 SOUTH PASADENA, FL 33707			COLE, LAURA C	
			ART UNIT	PAPER NUMBER
			1744	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/651,698	GOLDBERG ET AL.	
	Examiner	Art Unit	
	Laura C. Cole	1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 41-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 41-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06242005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Drawings

1. In the drawings, Figure 2 displays a filament. In the specification in paragraphs 55 and 59, reference numeral "104" depicts a plurality of projections and reference numeral "106" depicts a wedge-shaped insert. In Figure 2, are numerals "104" and "106" inadvertently switched?

Claim Objections

2. Claim 45 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 41 further defines a "treatment" that is part of the treating step in a process of creating a filament that is part of a mop head. The *method step* of "treating" is not germane to the patentability in apparatus claims, and therefore the "treatment" process of claim 45 does not provide any structural limitation that further limits the mop head or filament of claim 41.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1, 41-45, 47-48, and 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nordin, USPN 5,804,274 in view of <http://www.the-cloth.com/ourmicro.shtml> (herein referred to as "the-cloth website").

Nordin discloses the claimed invention including a mop head comprising a mop head coupling element (1; the base fabric), at least two cords (2), each of the at least two cords comprising a plurality of filaments twisted together in a bundle (Column 2 Lines 57-65, particularly Lines 64-65), each of the plurality of filaments are of a denier from about 0.02 to about 0.99 (Column 2 Lines 57-65; Column 3 Lines 64-67, 0.3 Dtex, 0.3 Dtex converts to 0.27 denier), each of the at least two cords includes at least one end (see Figures) and each of the at least two cords are bundled together at their ends (they are bundled by a base fabric, Column 2 Lines 33-42) and are secured to the mop head coupling element (Column 4 Lines 6-16) (Claims 1, 48, 51). In regards to Claims 41-42, 48, and 51, the *finished filament product* (no weight has been given to a "precursor material" as the "precursor material" is developed in claim 1 as part of the extruding and treating process steps, and claimed method steps are not germane to the patentability in apparatus claims) has a combination of polyester and nylon, specifically that it is about 70 to 90 percent polyester and about 10 to about 30 percent nylon (Column 3 Lines 64-67, claim 8). In regards to claims 43-44 and 52, each cord has two ends secured to the mop head coupling element to form each of the cords into a loop (see Figures) and there appears to be about 2 to 500 cords secured to the coupling element (see Figures). Regarding claims 47, 50, and 53 there are about 1,000 to 50,000 filaments twisted to comprise each of the cords (Column 3 Lines 64-67; each of

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the cords "2" have a thickness of 330 Dtex and since each filament which forms the yarn is 0.3 Dtex, each cord is about 1,000 filaments.) Nordin does not include that a *finished* filament comprises a split filament wherein the split filament has a core member with a plurality of projections emanating therefrom and a wedge-shaped insert disposed between "every other" projection.

"The cloth website" includes a cross section of a split micro fiber (left most picture on page 1) that illustrates a microfiber having a core member with a plurality of projections emanating therefrom and a wedge-shape insert disposed between every other projection. This fiber is used in a variety fabrics for cleaning and is 80% polyester and 20% nylon.

It would have been obvious for one of ordinary skill in the art to modify the microfiber of Nordin to be a split microfiber, as "the cloth website" teaches, in order to provide a microfiber filament that is advantageous to cleaning.

4. Claims 1, 41-42, 45, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 224 900 in view of <http://www.the-cloth.com/ourmicro.shtml> (herein referred to as "the-cloth website").

Regarding claims 1, 45, and 51, EP 1 224 900 discloses the claimed invention including a mop head comprising a mop head coupling element (a "headpiece or band", paragraph 6), at least two cords (paragraph 6), each of the at least two cords comprising a plurality of filaments twisted together in a bundle (paragraph 8), each of the plurality of filaments are of a denier from about 0.02 to about 0.99 (paragraph 7 states that the filaments are "microfibres" and from the Applicants own specification in

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paragraph 2, a microfiber(re) must be less than 1 denier), each of the at least two cords includes at least one end (a cord must inherently have one end; paragraphs 10-11) and each of the at least two cords are bundled together at their ends (they are bundled by tangling or welding, claims 2 or 5) and are secured to the mop head coupling element (see claims). EP 1 224 900 does not include specific properties of the microfibre filaments.

"The-cloth website" discloses all elements above in paragraph 3 that particularly address claims 1, 41-42, 45, and 51.

It would have been obvious for one of ordinary skill in the art to modify the microfibre elements of EP 1 224 900 to be a split microfiber comprising 80% polyester and 20% nylon, as "the-cloth website" teaches, in order to provide a microfiber element that is advantageous for cleaning.

5. Claims 1, 41-45, 48, and 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 362 544 in view of <http://www.the-cloth.com/ourmicro.shtml> (herein referred to as "the-cloth website").

Regarding claims 1, 48, and 51, EP 1 362 544 discloses the claimed invention including a mop head comprising a mop head coupling element (2), at least two cords (Abstract), each of the at least two cords comprising a plurality of filaments twisted together in a bundle (Abstract), each of the plurality of filaments are of a denier from about 0.02 to about 0.99 (Abstract states that the filaments are "microfibres" and from the Applicants own specification in paragraph 2, a microfiber(re) must be less than 1 denier), each of the at least two cords includes at least one end (9, 10) and each of the

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at least two cords are bundled together at their ends (see Figure 2) and are secured to the mop head coupling element (see Figures). Regarding claim 43, each cord has two ends (9, 10) that are secured to the mop head coupling element (see Figure 1) forming each of the two cords into a loop (see Figures). In regards to Claims 44 and 52, there are about 2 to about 500 cords secured to the coupling element. EP 1 362 544 does not include specific properties of the microfibre filaments.

"The-cloth website" discloses all elements above in paragraph 3 that particularly address claims 1, 41-42, 45, and 51.

It would have been obvious for one of ordinary skill in the art to modify the microfibre elements of EP 1 362 544 to be a split microfiber comprising 80% polyester and 20% nylon, as "the-cloth website" teaches, in order to provide a microfiber element that is advantageous for cleaning.

6. Claims 1, 41-42, 45, 48, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolton, USPN 6,131,233 in view of Dugan, USPN 6,465,095.

Regarding claims 1 and 51, Bolton discloses the claimed invention including a mop head (1) comprising at least two cords (3), each cord attached at one end to a common surface (2), and the plurality of cords formed by "twisting" or "intertwining" a plurality of individual filaments (woven, Column 1 Lines 56-57; woven is defined as "To interlace (threads, for example) into cloth" and "interlace" is defined as "spin or twist together so as to form a cord" according to *The American Heritage® Dictionary of the English Language, Fourth Edition Copyright © 2000 by Houghton Mifflin Company*), wherein the individual filaments are of less than 1.0 denier (Column 1 Lines 49-52),

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each of the at least two cords are bundled together at their ends and are secured to the mop coupling element (see Figure 1). The individual filaments are split (Column 1 Lines 52-53) and are capable of being treated to split. Regarding claims 41-42, the *finished* filaments are formed from a polyester and a nylon in a ratio of 70% polyester and 30% polyamide (Column 1 Lines 52-56, a nylon is a polyamide). In regards to claims 48 and 52, there are from about 2 to about 500 cords (see Figures). Bolton does not disclose that the *finished* split filament comprises a core member having a plurality of projections emanating therefrom and a wedge-shaped insert disposed between every other projection.

Also regarding claims 1 and 51, Dugan discloses a type of yarn incorporating fibers and twisting at least two fibers or filaments together (Column 15 Lines 62-67) wherein the filaments are less than 1 denier, specifically 0.5 denier (Column 7 Lines 20-24). The filament comprises a combination of polyester and nylon material (Column 1 Lines 17-21; Column 2 Line 66 to Column 3 Line 10). The filaments are split (Abstract) to comprise a core member (central portion of "8" in Figure 1C), a plurality of projections (the portion of "8" that extends from the center of Figure 1C), and a wedge-shaped insert disposed between every other projection (6; Figure 1C). The individual filaments are split or non-split (Column 16 Lines 20-23). The split filaments have good barrier properties and a high fiber surface area (Column 16 Lines 24-27).

It would have been obvious for one of ordinary skill in the art to modify the split fibers of Bolton to include a core member having a plurality of projections with wedge-

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shaped inserts disposed between every other projection, as Dugan teaches, in order to provide microfiber filaments that have a high fiber surface area.

7. Claims 46, 49, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1 362 544 and <http://www.the-cloth.com/ourmicro.shtml> (herein referred to as "the-cloth website") as applied to claims 1, 48, and 51 further in view of Wooley, USPN 6,131,731.

EP 1 362 544 and "the-cloth website" disclose all elements mentioned above in paragraph 5, however neither disclose that the *finished product* of two cords includes a solution of an antibacterial solution, fungicide, cleaning solution, deodorant, perfume, or coloring agent.

Wooley discloses a mop made of cords (210) having twisted filaments (310) and further includes impregnating the mop with a cleaning solution such as a germicidal agent (Column 5 Lines 56-60) so that medical areas may be cleaned effectively and efficiently (Column 1 Lines 5-9).

It would have been obvious for one of ordinary skill in the art to modify the mop head of EP 1 362 544 and "the-cloth website" to have a cleaning solution, as Wooley teaches, in order to quickly, effectively, and efficiently clean and kill germs from an area.

Applicants Arguments

8. In the response filed 24 June 2005, the Applicant contends that:

A. Bolton et al. does not disclose a mop head having cords formed by twisting (intertwining) at least two filaments together into a bundle to form the cords of the mop.

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Bolton et al. fails to disclose the use of cords constructed of microfiber filaments that have been twisted or intertwined together in a bundle to form a cord.

B. Quearry et al. alone or in view of Patrick does not disclose a mop head that meets the claims as amended.

C. Quearry et al. in view of Dugan does not disclose a mop head that meets the claims as amended.

Response to Arguments

9. Applicant's argument **A** filed 24 June 2005 have been fully considered but they are not persuasive.

Bolton et al. does in fact disclose a mop head having cords (cords are defined as "A slender length of flexible material usually made of twisted strands or fibers and used to bind, tie, connect, or support" according to *The American Heritage® Dictionary of the English Language, Fourth Edition Copyright © 2000 by Houghton Mifflin Company*) formed by twisting (intertwining) at least two filaments together into a bundle to form the cords of the mop. The filaments are "woven", Column 1 Lines 56-57, wherein woven is defined as "To interlace (threads, for example) into cloth" and "interlace" is defined as "spin or twist together so as to form a cord" according to *The American Heritage® Dictionary of the English Language, Fourth Edition Copyright © 2000 by Houghton Mifflin Company*. See paragraph 6.

10. Applicant's arguments **B-C** have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C. Cole whose telephone number is (571) 272-1272. The examiner can normally be reached on Monday-Thursday, 7:30am - 5pm, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Kim can be reached on (571) 272-1142. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LCC

LCC

31 August 2005


JOHN KIM
SUPERVISORY PATENT EXAMINER